CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.14/KRIDL/BC/Gradation/2015-16 16.05.

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Banga
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads & drains at 10th Cross Havanoor Layout connecting to Defence Colony in Bagalagunte Ward No. 14, B Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
SAMPLE I/D	Roads in Havanoor Layout, Ward No. 14, BBMP
DATE OF TESTING	16.05.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limi . per MORTI specification t 500-18 (Gradi
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	48.35	10.19	10.19	89.81	79-100
9.5	37.96	8.00	18.19	81.81	70-88
4.75	65.23	13.75	31.94	68.06	53-71
2.36	92.15	19.42	51.36	48.64	42-58
1.18	45.28	9.54	60.90	39.10	34-48
0.6	41.26	8.70	69.60	30.40	26-38
0.3	32.18	6.78	76.38	23.62	18-28
0.15	28.45	6.00	82.37	17.63	12-20
0.075	52.16	10.99	93.37	6.63	4-10

Sieve Size in mm	Trail 2				Specified Limi per MORTI specification t 500-18 (Gradi
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.28	9.76	9.76	90.24	79-100
9.5	38.52	8.13	17.89	82.11	70-88
4.75	71.46	15.08	32.97	67.03	53-71
2.36	58.57	12.36	45.32	54.68	42-58
1.18	77.36	16.32	61.64	38.36	34-48
0.6	36.25	7.65	69.29	30.71	26-38
0.3	28.94	6.11	75.40	24.60	18-28
0.15	38.76	8.18	83.57	16.43	12-20
0.075	53.15	11.21	94.79	5.21	4-10

Note:

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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.14/KRIDL/BC/Bitumen/2015-16

16

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Ban
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads & drains at 10th Cross Havanoor Layo connecting to Defence Colony in Bagalagunte Ward No. 14, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
SAMPLE I/D	Roads in Havanoor Layout, Ward No. 14, BBMP
DATE OF TESTING	16.05.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	26.00
7. Bitumen content in %	5.10	5.20
8. Average	5.15	

Note:

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VISHWANATH .C
Quality Manager

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Job No.: CTCE/BBMP/W.No.14/KRIDL/BM/Gradation/2015-16 15.05.2

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BB Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads & drains at 10th Cross Havanoor Layout I connecting to Defence Colony in Bagalagunte Ward No. 14, BB Bangalore.
REFERENCE	BBMP/DZ./AEE/TDSD/PR/2015-16 Dated: 01.04.2015
SAMPLE I/D	Roads in Havanoor Layout, Ward No. 14, BBMP
DATE OF TESTING	15.05.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits per MORTH specification ta 500-04 (Grading
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	36.56	7.58	7.58	92.42	90-100
13.2	114.47	23.72	31.30	68.70	56-88
4.75	245.79	50.94	82.24	17.76	16-36
2.36	51.46	10.67	92.91	7.09	4-19
0.3	12.68	2.63	95.54	4.46	2-10
0.075	6.53	1.35	96.89	3.11	0-8

Sieve Size in mm	Trail 2				Specified Limits per MORTH specification ta 500-04 (Grading
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	31.85	6.60	6.60	93.40	90-100
13.2	105.78	21.92	28.52	71.48	56-88
4.75	242.52	50.26	78.79	21.21	16-36
2.36	48.34	10.02	88.81	11.19	4-19
0.3	21.67	4.49	93.30	6.70	2-10
0.075	11.39	2.36	95.66	4.34	0-8

Note:

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VISHWANATH

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Job No.: CTCE/BBMP/W.No.14/KRIDL/BM/Bitumen/2015-16 15.0

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bang
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads & drains at 10th Cross Havanoor Layou connecting to Defence Colony in Bagalagunte Ward No. 14, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
SAMPLE I/D	Roads in Havanoor Layout, Ward No. 14, BBMP
DATE OF TESTING	15.05.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	482.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	17.50
7. Bitumen content in %	3.50	3.50
8. Average	3.50	

Note:

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VISHWANATH .C
Quality Manager

16/5/15

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CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/Gradation/2015-16 04

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to roads & drains at 10th Cross Havanoor Layout Road conne Defence Colony in Bagalagunte Ward No. 14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015

Date of Testing : 04.05.2015

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): 290

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.L
53	0	0	0	100	10
45	892	892	3.1	96.9	95-1
22.4	9075	9967	34.3	65.7	60-8
11.2	5243	15210	52.3	47.7	40-6
4.75	4186	19396	66.8	33.2	25-4
2.36	3354	22750	78.3	21.7	15-3
0.600	2285	25035	86.2	13.8	8-2
0.075	2495	27530	94.8	5.2	0-8

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VISHWANATH .C
Quality Manager

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/804e/CUBE/2015-16 18.0

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBI

*** Customer**	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Ban
*** Agency**	: **Technical Manager (West),** KRIDL, Bangalore.
*** Name of the work**	: Improvements to roads & drains at 10th Cross Havanoor Layout connecting to Defence Colony in Bagalagunte Ward No. 14, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
*** Sample ID**	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
*** Grade of Concrete**	: M_{15}
Compressive Strength as on	: 28^{th} day
Sample Received on	: 20.04.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compress strength (N/
1	20.04.2015	18.05.2015	8.149	367.2	16.32
2	20.04.2015	18.05.2015	8.237	395.4	17.57
3	20.04.2015	18.05.2015	8.362	383.1	17.03

* Information is furnished by the Customer/Representative

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18/8/15

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ದಾಸರಹಳ್ಳಿ, ಬೆಂಗಳೂರು - 560 073

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VISHWANATH
Quality Manag

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/804e/CC Solid Block/2015-16 : 07.04

TEST REPORT ON SOLID CONCRETE BLOCKS

* Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalo
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of the Work	: Improvements to roads & drains at 10th Cross Havanoor Layout connecting to Defence Colony in Bagalagunte Ward No. 14, BBMP, Banga
Reference	: BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
Sample Received on	: 01.04.2015
Date of Testing	: 07.04.2015
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as IS 2185 (Part 2005
1	Block 1	35.15	263.8	3.30	
2	Block 2	34.67	262.4	3.28	
3	Block 3	36.92	261.9	3.27	
4	Block 4	35.76	263.5	3.29	Minimum requ Compressive Str
5	Block 5	36.28	265.4	3.32	of Individual U
6	Block 6	34.53	264.2	3.30	3.20 N/mm
7	Block 7	35.68	262.7	3.28	
8	Block 8	34.95	263.9	3.30	

*Information is furnished by the Customer/Representative.

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/804c/AGG/GR/2015-16 : 04.04.

TEST REPORT ON COARSE AGGREGATES

*** Customer**	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalo
*** Agency**	: **Technical Manager (West),** KRIDL, Bangalore.
*** Name of Work**	: Improvements to roads & drains at 10th Cross Havanoor Layout connecting to Defence Colony in Bagalagunte Ward No. 14, BBMP, Banga
Reference	: BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
Technical Reference	: IS : 2386 Part 1 -1963 RA-2007
Sample ID	: Coarse Aggregates (40mm) - Sample 2
Sample Received on	: 01.04.2015
Date of Testing	: 04.04.2015

Total Wt. of Aggregates in gms= **10000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 200	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.33	95-100	85-100
20	40.21	30-70	0-20
10	12.56	10-35	0-5
4.75	2.10	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Quality Mana

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NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/804e/SAND-Gradation/2015-16 : 0

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	: Improvements to roads & drains at 10th Cross Havanoor Layout Road conn Defence Colony in Bagalagunte Ward No. 14, BBMP, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.2015
Technical Reference	: IS : 2386 Part 1 - 1963 RA-2007
Sample ID	: Fine Aggregates - Sample 1
Sample Received on	: 01.04.2015
Date of Testing	: 04.04.2015

Total Wt. of Aggregates in gms 10

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone
10	100	100	100	100	10
4.75	93.70	90-100	90-100	90-100	95-1
2.36	76.90	60-95	75-100	85-100	95-1
1.18	57.40	30-70	55-90	75-100	90-1
600 Micron	40.20	15-34	35-59	60-79	80-1
300 Micron	13.70	5-20	8-30	12-40	15-
150 Micron	3.30	0-10	0-10	0-10	0-1

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-II specific limits.

Note:

a. The report shall not be reproduced, except in full, without the written approval of the laboratory.

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c. Any Query regarding the report must be reported within 30 days from the date of testing.

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VISHWANATH
Quality Manage

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/804e/CEMENT/2015-16 Date: 04.04.

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Div BBMP, Bangalore.
*AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
*NAME OF THE WORK	:	Improvements to roads & drains at 10th Cross Hava Layout Road connecting to Defence Colony in Bagala Ward No. 14, BBMP, Bangalore.
REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 01.04.20
SAMPLE ID	:	Cement – Sample 2
SAMPLE RECEIVED ON	:	01.04.2015
PERIOD OF TESTING	:	01.04.2015 to 04.04.2015

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	185 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	455 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

Information is furnished by the Customer/Representative.

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VISHWANATH .
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